USDA
NATURAL RESOURCES
CONSERVATION SERVICE
MARYLAND
CONSERVATION PRACTICE
STANDARD

RESIDUE MANAGEMENT; SEASONAL

CODE 344
(Reported in Acres)

DEFINITION

Managing the amount, orientation, and distribution of crop and other plant residues on the soil surface during part of the year, while growing crops in a clean tilled seedbed.

PURPOSES

This practice may be applied as part of a conservation management system to support one or more of the following resource concerns:

- Reduce sheet and rill erosion.
- Reduce soil erosion from wind.
- Provide food and escape cover for wildlife.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all cropland and other land where crops are grown.

This standard includes residue management methods practiced during part of the year from harvest until residue is buried by tillage for seedbed preparation.

CRITERIA

General Criteria Applicable to All Purposes

Loose residues to be retained on the field shall be uniformly distributed on the soil surface. Residues should be uniformly distributed during or immediately following harvest.

Additional Criteria to Support Specific Purposes to Reduce Sheet and Rill Erosion

The amount of residue needed to reduce erosion within the soil loss tolerance (T), or any other planned soil loss objective, shall be determined using the Revised Universal Soil Loss Equation (RUSLE) erosion prediction technology. Partial removal of residue by means such as baling or grazing shall be limited to retain the amount and distribution needed. The remaining residue shall be maintained on the surface through periods when sheet and rill erosion has the potential to occur, or until planting, whichever occurs first. Calculations shall account for the effects of other practices in the conservation management system.

Any tillage that occurs during the management period shall be limited to methods which leave residue on the surface and maintain the planned cover conditions.

Additional Criteria to Reduce Wind Erosion

The amount of residue needed to reduce erosion within the soil loss tolerance (T), or other planned soil loss objective, shall be determined using current approved wind erosion prediction technology. Partial removal by means such as baling or grazing shall be limited to retain the amount and distribution needed. The remaining residue shall be maintained on the surface through periods when soil erosion by wind has the potential to occur, or until planting time, whichever occurs first. Calculations shall account for the effects of other practices in

the conservation management system.

Additional Criteria to Provide Food and Escape Cover for Wildlife

The amount of residue, height of the stubble, and length of the management period necessary for meeting habitat requirements for the target species or wildlife population shall be determined using an approved habitat evaluation procedure.

Residues shall not be removed unless it is determined by the habitat evaluation procedure that removal would not adversely affect habitat values.

Tillage shall be delayed until the end of the management period to maintain the food and cover value of the residue. Stubble shall be maintained standing over winter.

PLANNING CONSIDERATIONS

Partial removal of plant residue by such means as baling or grazing may produce negative impacts on resources. The effects of residue removal shall be considered when evaluating the impacts on soil, water, air, plant, and animal resources. These activities should not be performed if the result is excess removal of plant residues.

Production of adequate amounts of crop residues necessary for the proper functioning of this practice can be enhanced by selection of high residue producing crops and crop varieties in the rotation, use of cover crops, and adjustment of plant populations and row spacing.

When planting on a clean seedbed, exposure to erosion can be minimized by performing secondary tillage no more than three days before planting and by limiting the number of secondary tillage operations to the minimum needed for adequate seedbed preparation.

When planting on a clean seedbed in areas with limited moisture, moisture for germination can be increased by performing secondary tillage no more than three days before planting.

The value of residues for wildlife habitat can be enhanced by leaving rows of unharvested crop standing at intervals across the field.

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and Operation and Maintenance described in this standard. Specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Proper adjustment, operation, and maintenance of equipment is essential for successful implementation of this practice.

Monitor residue remaining when corn stalks are mechanically removed for fodder or bedding at start of field operations. Adjust equipment setting if removal percentage is too high to meet residue remaining target.

If crop residue is grazed by livestock, monitor fields on a regular basis, and remove livestock when residue remaining minimum is approached.

SUPPORTING DATA AND DOCUMENTATION

1. Identify resource concern(s) to be treated (see **PURPOSES**).

2. Ensure that field location, acreage, crop rotation, and percent residue needed to address identified resource concern(s) are recorded in the conservation plan.

3. Soil loss calculations if needed.

REFERENCES

1. Renard, K.G., G.R. Foster, G.A. Weesies, D.K. McCool, and D.C. Yoder, coordinators. Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE). USDA Agricultural Handbook No. 703, 1997.

2. Maryland RUSLE Manual (FOTG), USDA NRCS, March, 1995.

3. National Handbook of Conservation Practices, USDA Natural Resources Conservation Service.

4. Conservation Research Report No. 41, Crop Residue Management To Reduce Erosion and Improve Soil Quality - Appalachia and Northeast, USDA Agricultural Research Service, Washington, D.C., August, 1995.

5. Lamarca, Carlos Crovetto. Stubble Over the Soil: The Vital Role of Plant Residue in Soil Management to Improve Soil Quality, 1996.

6. National Agronomy Manual, USDA Natural Resources Conservation Service.